SAMPLING & ANALYSIS PLAN
FOR THE
BAKER PERKINS SITE
SAGINAW, SAGINAW COUNTY, MICHIGAN

Prepared for
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region V

Prepared by
WESTON SOLUTIONS, INC.
Region V Superfund Technical Assessment and Response Team

April 18, 2014

Approved by: _____ Date: _____
EPA Region V
On-Scene Coordinator

Project Dates of Monitoring/Sampling:	April 22 - 24, 2014
CERCLA Site/Spill Identifier No.:	C51X
Contractor Organization:	Weston Solutions, Inc.
Contract Name:	START III
Contract No.:	EP-S5-06-04
Technical Direction Document No.:	S05-0001-1404-004
Document Control No.:	2317-4H-BLRN

ACRONYM LIST

ACM	Asbestos Containing Material
ACWM	Asbestos Containing Waste Material
AHERA	Asbestos Hazard Emergency Response Act
CARB	California Air Resource Board
COC	Chain of Custody
HI	Hazard Index
NOB	Non-friable Organically Bound
OSC	On-Scene Coordinator
PCB	Polychlorinated Biphenyls
PLM	Polarized Light Microscopy
PPE	Personal Protective Equipment
QAPP	Quality Assurance Project Plan
QA/QC	Quality Assurance/Quality Control
RACM	Regulated Asbestos Containing Material
RML	Removal Management Level
SAP	Sampling & Analysis Plan
SL	Screening Level
START	Superfund Technical Assessment and Response Team
TR	Target Risk
TEM	Transmission Electron Microcopy
WESTON	Weston Solutions, Inc.

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1.0 Introduction

This Sampling & Analysis Plan (SAP) identifies the data collection activities and associated quality assurance/quality control (QA/QC) measures specific to the Baker Perkins Site (the Site) located in Saginaw, Saginaw County, Michigan. All data will be generated in accordance with the quality requirements described in the Weston Solutions, Inc. (WESTON) *Superfund Technical Assessment and Response Team (START) III Generic Quality Assurance Project Plan (QAPP),* dated June 2006. The purpose of this SAP is to describe site-specific tasks that will be performed in support of the stated objectives. The SAP will reference back to the QAPP for generic tasks common to all data collection activities including routine procedures for sampling and analysis, sample documentation, equipment decontamination, sample handling, data management, data assessment and data review. Additional site-specific procedures and/or modifications to procedures described in the *START III Generic QAPP* are described in the following SAP elements.

This SAP is prepared, reviewed, and approved in accordance with the procedures detailed in the *START III Generic QAPP*. Any deviations or modifications to the approved SAP will be documented using **Table 1: SAP Revision Form.**

2.0 Project Management List and SAP Distribution

Management of the Site will be as documented in the *START III Generic QAPP*. Refer to the *START III Generic QAPP* for an organizational chart, communication pathways, personnel responsibilities and qualifications, and special personnel training requirements.

The following personnel will be involved in planning and/or technical activities performed for this data collection activity. Each will receive a copy of the approved SAP. A copy of the SAP will also be retained in the Site project file.

Personnel	Title	Organization	Phone Number	Email
Tricia Edwards	OSC	EPA	734-740-9016	Edwards.Tricia@epamail.epa.gov
Lori Kozel	Project Manager	START	248-658-5012	Lori.Kozel@westonsolutions.com
Andrew Kiel	Project Lead / FSO	START	440-202-2804	Andrew.Kiel@westonsolutions.com
Linda Korobka	Health and Safety	START	517-381-5936	Linda.Korobka@westonsolutions.com
Scott Stolz	Field Scientist	START	517-381-5927	Scott.Stolz@westonsolutions.com
Lisa Graczyk	QA/QC	START	312-424-3339	LGraczyk@css-dynamac.com

NOTES:
OSC – On-Scene Coordinator
QA/QC – Quality Assurance / Quality Control
START – Superfund Technical Assessment and Response Team

3.0 Planning and Problem Definition

3.1 Problem Definition

The Site is located at 1010 Hess Avenue in Saginaw, Saginaw County, Michigan (Figure 1). The Site is in an industrial building surrounded by mixed residential and commercial properties. The Site coordinates are 43°23'59.09" North latitude and 83°57'04.66" West longitude. The Tax ID/Parcel ID's associated with this site assessment. 12 0541 00000 / 12045100000, 12 0541 00200 / 12045100200, 12 0541 00400 / 12045100400, 12 0541 00500 / 12045100500, 12 0541 00600 / 12045100600, 12 0541 00700 / 12045100700, 12 0541 00800 / 12045100800, and 12 0541 00900 / 12045100900. The 12 0541 00500 / 12045100500 Tax ID / Parcel ID is owned by the Saginaw County Land Bank Authority. The owner of the remaining Tax ID / Parcel ID's is the Saginaw Cevelopment LLC. The Site encompasses approximately 12.471 acres and contains several demolished multi-story building and several intact and partially intact structures. . The Site is bounded to the north by residential properties, to the east and west by the Saginaw industrial or warehouse buildings, and to the south by industrial or warehouse buildings and a cemetery. Most of the main structure was demolished by fire, and the remaining portion of the main building was demolished by subsequent demolition activities. There is no fence surrounding the Site, and access onto the Site is unrestricted. A site assessment will be conducted on April 22nd, 23rd and 24th, 2014, to determine if the Site poses a threat to human health, human welfare, and the environment.

3.2 Site History and Background

The Baker Perkins property contained a multi-story building at 1010 Hess Avenue in Saginaw, Michigan. The building was recently destroyed by a massive fire. According to an environmental assessment of the Site conducted last year, the main structure was completely demolished, and two smaller metal outbuildings along the western and southwestern portions of the property remain intact. Most of the salvageable metal has been removed from the debris piles.

AKT Peerless Environmental & Energy Services (AKT Peerless) conducted an environmental assessment of the current conditions of the Site. As part of this assessment, AKT Peerless identified six previous environmental assessments of the Site prior to the fire and subsequent demolition of the main building. These previous environmental reports were not available for review, and the findings of these reports were not summarized in the AKT Peerless Current Site Conditions report.

The AKT Peerless Current Site Conditions report was limited to the identification and characterization of the various waste streams identified on Site for subsequent transportation and disposal. Environmental concerns addressed in the AKT Peerless Current Site Conditions report included:

- Nine bulk samples were collected from suspect asbestos containing materials (ACM) within the debris piles. Six roofing material samples and 3 transite samples were collected for analysis to determine the presence and concentration of asbestos. Asbestos

was identified in both roofing material and transite bulk samples.

- Two wood block floor samples were collected and submitted to the laboratory for analysis. These wood block samples were collected from visually stained areas. Analytical parameters included: TCLP Volatile Organics, TCLP Semi-volatile Organics, TCLP Polychlorinated Biphenyls, and TCLP Michigan 10 Metals. 1.6 mg/L zinc was the only detected compound in wood block sample WB-1, and 1.5 mg/L copper and 1.8 mg/L zinc were the only detected compounds detected in the wood block sample WB-2.

- One composite sample of general demolition debris was collected "from the piles located across the subject property". The general composition and estimated quantity of this waste pile was not documented. Analytical parameters included: TCLP Volatile Organics, TCLP Semi-volatile Organics, TCLP Polychlorinated Biphenyls, and TCLP Michigan 10 Metals. 2.3 mg/L barium, 2.8 mg/L zinc, and 0.0067 mg/L 2-Butanone were the only detected compounds for this waste characterization sample.

- One liquid sample was collected from a 3'x 3' x 4' pit located in the central portion of the Site. Analytical parameters included: TCLP Volatile Organics, TCLP Semi-volatile Organics, TCLP Polychlorinated Biphenyls, and TCLP Michigan 10 Metals. 1.5 mg/L copper and 1.8 mg/L zinc were the only detected compounds for this liquid pit sample.

3.3 Contaminants of Concern/Target Analytes

The main contaminants of concern at the Site include the presence of asbestos within the fire-damaged debris, PCBs in the wood block flooring, and hazardous waste constituents in the liquid waste identified in a vault in the central portion of the Site.

4.0 Project Description and Schedule

A Site Assessment will be conducted on April 22nd, 23rd, and 24th, 2014. One EPA On-Scene Coordinator (OSC) and two START personnel will be on Site for this Site Assessment activity. The site assessment is scheduled to take three days to complete. The turnaround time for the analysis of these bulk samples will be 10 work days. The final report will be submitted to the EPA within 2 to 3 weeks after receiving the laboratory analytical data.

5.0 Project Quality Objectives

The project quality objectives of these sampling activities are to ensure that all suspect ACM within the fire-damaged debris has been sampled, assessed, and quantified, and to determine if these suspect ACMs create a threat to human health and the environment. Project objectives will also include the identification, inventory and possible field screening of wood block flooring and liquids within a vault on Site to determine a threat to human health and the environment. WESTON START did not have an opportunity to conduct a Site Walk to identify and assess all the potential hazards associated with the Site.

5.1 Project Objectives

The project quality objectives of this sampling event include:

Asbestos Bulk Samples. An asbestos assessment will be completed to characterize the extent of asbestos contamination within the debris piles and determine if the asbestos related materials and debris create a threat to human health and the environment. This Site Assessment will not include the collection of bulk samples from partially demolished portions of the building(s) or buildings that are intact. Representative bulk samples of building materials and debris will be collected and submitted to a laboratory for analysis. The laboratory analytical results from these bulk samples along with a visual assessment of the conditions will determine if the ACM creates an airborne hazard and transportation and disposal requirements. Further assessment of the debris piles will be conducted in order to possibly segregate asbestos contaminated and non-asbestos contaminated debris.

Surface Soil Samples. The collection and laboratory analysis of soil samples has been incorporated into the SAP in the event that characterization of asbestos content in the surface soil is required. The specific sampling rationale, sampling scheme, and sample quantity will be determined on Site after the Site conditions have been assessed. The collection and laboratory analysis of surface soil samples is unlikely; however, mixed debris samples may be collected to establish if non-suspect ACM has been impacted by suspect ACM.

Wood Block Floor Samples.
A total of ten composite wood block samples will be collected in order to determine the presence of PCBs. WESTON START did not have an opportunity to conduct a Site Walk to identify the magnitude and quantity of visually stained areas, or identify the aerial extent to the intact wood blocks and wood blocks present within the debris piles. The collection and laboratory analysis of these wood block samples will be to determine the presence, concentration of PCBs, and the likelihood of unauthorized personnel being exposed to this potential hazard.

Liquid Vault Sample(s).
One liquid sample will be collected from the 3'x3'x4' subsurface vault located near the center of the Site. WESTON START did not have an opportunity to conduct a Site Walk to identify the contents of this subsurface vault and a possible source of the liquids. WESTON START is anticipating both oil and water within the vault. The collection and laboratory analysis of these liquid samples will be to determine the presence of hazardous constituents within the liquid, the approximate quantity of the liquid, and the likelihood of unauthorized personnel being exposed to this potential hazard.

5.2 Measurement and Performance Criteria

Generic measurement and performance criteria described in the *START III Generic QAPP* will be used to ensure that data are sufficiently sensitive, precise, accurate, and representative to support site decisions.

5.3 Data Quality Objectives

Data quality objectives address requirements that include when, where, and how to collect samples, the number of samples, and the limits on tolerable error rates. These steps should periodically be revisited as new information about a problem is learned.

Asbestos Bulk Samples.
The asbestos analytical results will be used to determine if asbestos is present in building materials within the piles of demolition debris. The concentration of asbestos for these asbestos bulk samples will be trace, or any asbestos fibers detected.

Surface Soil Samples.
The laboratory analytical results generated from the surface soil and/or surface debris samples will be used to determine if the asbestos is present within the surface soil or surface debris. The concentration of asbestos for these asbestos soil samples will be trace, or any asbestos fibers detected.

Wood Block Floor Samples.
The laboratory analytical results generated from the wood block samples will be compared against the Industrial Soil Removal Management Level (RML) Direct Screening Level (SL) Target Risk (TR) contact of 1.4E+01 for Carcinogenic Target Risk (TR) concentration and the 1.1E+01 Noncancer Hazard Index (HI) concentration.

Liquid Vault Sample(s).
The laboratory analytical results generated from the oil and water samples collected from the vault be be compared against the hazardous characteristics presented in 40 CFR 260, Subpart C, Part 261.

6.0 Sampling Design

START will perform the Site activities detailed in the following subsections.

6.1 Sample Collection

Bulk sampling for Asbestos –An asbestos assessment will be completed to characterize the extent of asbestos contamination within the debris piles on Site. The asbestos assessment will be limited to asbestos related materials and debris that may be a threat to human health and the environment, and subsequent transportation and disposal. Representative bulk samples of building materials will be collected and submitted to a laboratory for analysis. Representative sample collection will be based on the specific material or waste sampled (homogeneous area identified if possible), or a representative quantity based on spatial distribution. The condition of the suspect ACM will also be

assessed. The laboratory analytical results from these bulk samples along with a visual assessment of these ACM creates a threat to human health and the environment. A rock hammer will be used to break consolidated suspect ACM in order to place the samples into zip lock bags. Other hand tools to be used to remove small representative potions of suspect ACM to be placed into zip lock bags include pliers and razor knifes.

Soil Sampling for Asbestos. The collection and laboratory analysis of soil samples has been incorporated into the SAP in the event that characterization of asbestos content in the surface soil is required. The specific sampling rationale, sampling scheme, and sample quantity will be determined on Site after the Site conditions have been assessed. A designated plastic scoop will be used to place approximately 10 grams of media in the sample container. Laboratory analysis for these soil samples will be conducted by California Air Resource Board (CARB 435) with Modified EPA Method 600/R-93/116 Polarized Light Microscopy (PLM) analysis, with an analytical sensitivity of 0.1% asbestos.

Wood Block Floor Samples.

A total of ten composite wood block samples will be collected in order to determine the presence of PCBs. Each composite sample will be comprised of 9-point aliquot samples. After specific composite sample locations have been designated, a hammer and wood chisel will be used to remove small sections of the perimeter of the wood block. The outer surface of the wood block is the most likely impacted portion of the wood block.

Liquid Vault Sample(s).

One liquid sample will be collected from the 3'x3'x4' subsurface vault located near the center of the Site. A dedicated plastic bailer, drum thief or coliwasa will be used to extract the oil and liquid media from the vault. Depending on the depth of the water level from the ground surface, a glass jar may be used to collect the oil from the surface of the water in the vault.

The sample media and preservation requirements are presented in **Table 2: Sampling and Analysis Summary.**

6.2 Sample Numbering System

All samples for analysis, including QC samples, will be given a unique sample number. The sample numbers will be recorded in the field logbook, the chain-of-custody (COC) paperwork, and the shipment documents.

START will assign each sample a project sample number. The project sample number highlights the suspected contaminated area and location, and will be used for documentation purposes in field logbooks, as well as for presentation of the analytical data in memoranda and reports.

The project air samples and monitoring data points will be identified using the following format:

BP-BLK-HA-00-x

Where:

WS designates the sample is from the Baker Perkins Site
BLK means a bulk sample from the demolition debris
HA designates the homogeneous area
00 is the sequential bulk sample number for that specific homogeneous area sample
x = specific analytical method used to analyze the bulk sample

BP-SOIL-X-00

Where:

WS designates the sample is from the Baker Perkins Site
SOIL means surface soil or mixed debris sample
X designates the soil / mixed debris sample location
00 is the sequential soil / mixed debris sample number

BP-WB-00

Where:

WS designates the sample is from the Baker Perkins Site
WB means wood block sample
00 is the sequential wood block sample number

BP-LIQ-00

Where:

WS designates the sample is from the Baker Perkins Site
LIQ means liquid sample
00 is the sequential liquid sample number

6.3 Management of Investigation-Derived Wastes

For purposes of this SAP, investigation-derived wastes are defined as any byproduct of the field activities that is suspected or known to be contaminated with hazardous substances. The performance of field activities will produce spent Personal Protective Equipment (PPE). Note that disposable equipment will be used for all sample collection and therefore, no decontamination water will be generated. All waste generated during the site assessment will be placed in trash bags and left on site in a staging area with EPA approval. If required, disposal arrangements will be executed in accordance with appropriate local, state, or federal regulations. START will refer to the EPA's *Management of Investigation-Derived Wastes During Site Inspections* (EPA, 1991) guidance on off-

site disposal policies, if this action is deemed necessary.

7.0 Sampling Procedures

7.1 Sampling Standard Operating Procedures

The START team will follow the procedures set forth in Section 6 for the sampling to be conducted at the Site.

7.2 Decontamination Procedures

General decontamination procedures are described in Section B.2 of the *START III Generic QAPP*. The following standard decontamination protocols will be used:

- All disposable sampling supplies and PPE will be bagged and staged on site in an area specified by the EPA.
- All sampling equipment that is not disposable will be decontaminated with a disposable wet cloth.

8.0 Sample Handling, Tracking, and Custody Procedures

All samples will be identified, handled, shipped, tracked, and maintained under COC, in accordance with *START III Generic QAPP* Section B.3. Sample preparation and the preparation of the COC forms will be completed by Weston START personnel. The ERRS contractor will be responsible for the proper shipment of these samples to the laboratory for analysis.

9.0 Field Analytical Methods and Procedures

9.1 Field Analytical Methods and Standard Operating Procedures

Field analytical methods will not be employed during the air sampling activities.

9.2 Field Testing Laboratory

A field testing laboratory will not be used during the air sampling events at the Site.

9.3 Screening/Confirmatory Analyses

Screening or confirmatory analyses will not be conducted at the site.

10.0 Fixed Laboratory Analytical Methods and Procedures

A commercial laboratory will be utilized for analytical services. The Weston START will be responsible for subcontracting the laboratory and will provide sample coordination including laboratory coordination and sample shipment/delivery. Sample labels and COC paperwork will be generated by START. Samples will be packaged properly by START and shipped daily for next-day delivery. The turn-around time for the sample data will be 10 working days, depending on the specific analysis. The laboratory selected to analyze the samples collected during this site assessment activity has not been determined.

The laboratory analytical methods and procedures are detailed in Table 2 of this SAP.

11.0 Quality Control Activities

11.1 Field Quality Control

Field QC samples will be collected and analyzed for this project at the frequency described in *START III Generic QAPP*, Table 4. The number of QC samples collected for each analytical parameter and concentration level are listed in **Table 2: Sampling and Analysis Summary.**

11.2 Analytical Quality Control

QC for analytical procedures will be performed at the frequency described in *START III Generic QAPP*, Tables 5 and 6. In addition, method-specific QC requirements will be used to ensure data quality. Analytical procedures will also be performed in accordance with the selected laboratory's Quality Assurance Manual.

11.3 Performance Evaluation Samples

Performance Evaluation Samples will not be collected during this sampling event.

12.0 Documentation, Records, and Data Management

Documentation, record keeping, and data management activities will be conducted in accordance with the *START III Generic QAPP*, Section B.10.

13.0 Quality Assurance Assessment and Corrective Actions

No field audits will be conducted due to the short amount of time that sampling will be conducted at the site.

14.0 Reports to Management

Reports to management will be written and distributed in accordance with the *START III Generic*

QAPP, Section C.

15.0 Steps 1, 2 and 3: Data Review Requirements and Procedures

Step 1: Data collection activities, including sample collection and data generation, will be verified in accordance with the *START III Generic QAPP,* Section D.

Step 2: Data will be validated by a WESTON START or ERRS chemist. If validated by a START chemist, the data will be validated in accordance with the *START III Generic QAPP,* Section D.

Step 3: Data will be reviewed for usability in accordance with the *START III Generic QAPP*, Section D.

Table 1
SAP Revision Form

Site: Baker Perkins, Saginaw, Saginaw County, Michigan
OSC: Tricia Edwards
TDD: S05-0001-1404-004

Date	Rev. No.	Proposed Change to SAP/QAPP	Reason for Change of Scope/Procedures	SAP Section Superseded	Requested By	Approved By

Table 2
Sampling and Analysis Summary

Site: Baker Perkins, Saginaw, Saginaw County, Michigan
OSC: Tricia Edwards
TDD: S05-0001-1404-004

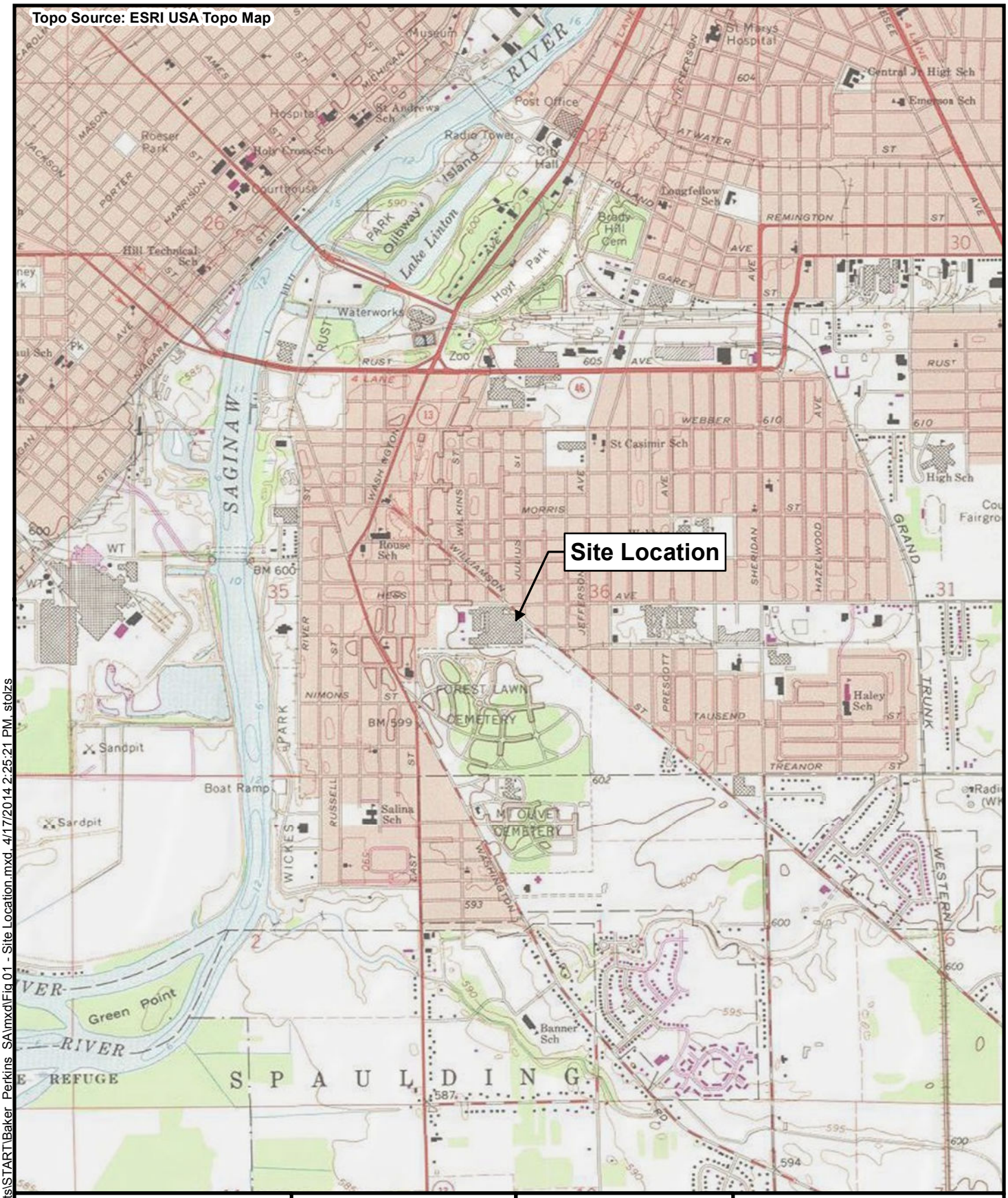
Matrix	Analytical Parameter	Analytical Method	Sample Jars	Preservation Requirements	No. of Sampling Locations	No. of Days Sampling	No. of Duplicates	Total No. of Samples to Lab
Building Material	Asbestos	EPA 600/R-93/116 PLM	Ziploc baggie	None	25	1	2	27
	Asbestos	PLM EPA NOB – Gravimetric	Ziploc baggie	None	10	1	1	11
	Asbestos	TEM EPA NOB – Gravimetric	Ziploc baggie	None	10	1	1	11
Soil	Asbestos	PLM CARB 435 – 1,000 points	Ziploc baggie	None	5	1	1	6
Wood Block	PCBs	PCBs/8082	8 ounce glass	None	10	3	1	11
Waste Liquid/Oil	Target Compound List (TCL) VOCs	8260B	4 ounce glass	None	1	1	0	1
Waste Liquid/Oil	TCL SVOCs	8270C	1 liter glass	None	1	1	0	1

Matrix	Analytical Parameter	Analytical Method	Sample Jars	Preservation Requirements	No. of Sampling Locations	No. of Days Sampling	No. of Duplicates	Total No. of Samples to Lab
Waste Liquid/Oil	TAL Metals	6010,6020, 7471	1 liter glass	None	1	1	0	1
Waste Liquid/Oil	PCBs	8082	1 liter glass	None	1	1	0	1
Waste Liquid/Oil	TPH as DRO, GRO, ORO	8015	8 ounce glass	None	1	1	0	1
Water	Target Compound List (TCL) VOCs	8260B	40 ml glass	HCL dilute	1	1	0	1
Water	TCL SVOCs	8270C	1 liter glass	None	1	1	0	1
Water	TAL Metals	6010,6020, 7471	1 liter glass	Nitric Acid dilute	1	1	0	1
Water	PCBs	8082	1 liter glass	None	1	1	0	1
Water	TPH as DRO, GRO, ORO	8015	8 ounce glass	None	1	1	0	1

Notes:

CARB – California Air Resource Board
EPA – United States Environmental Protection Agency
NOB – Non-friable Organically Bound
No. – Number
TEM – Transmission Electron Microscopy

FIGURES



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Prepared for:
U.S. EPA REGION V
Contract No.: EP-S5-06-04
TDD: S05-0001-1404-004
DCN: 2317-4H-BLRN

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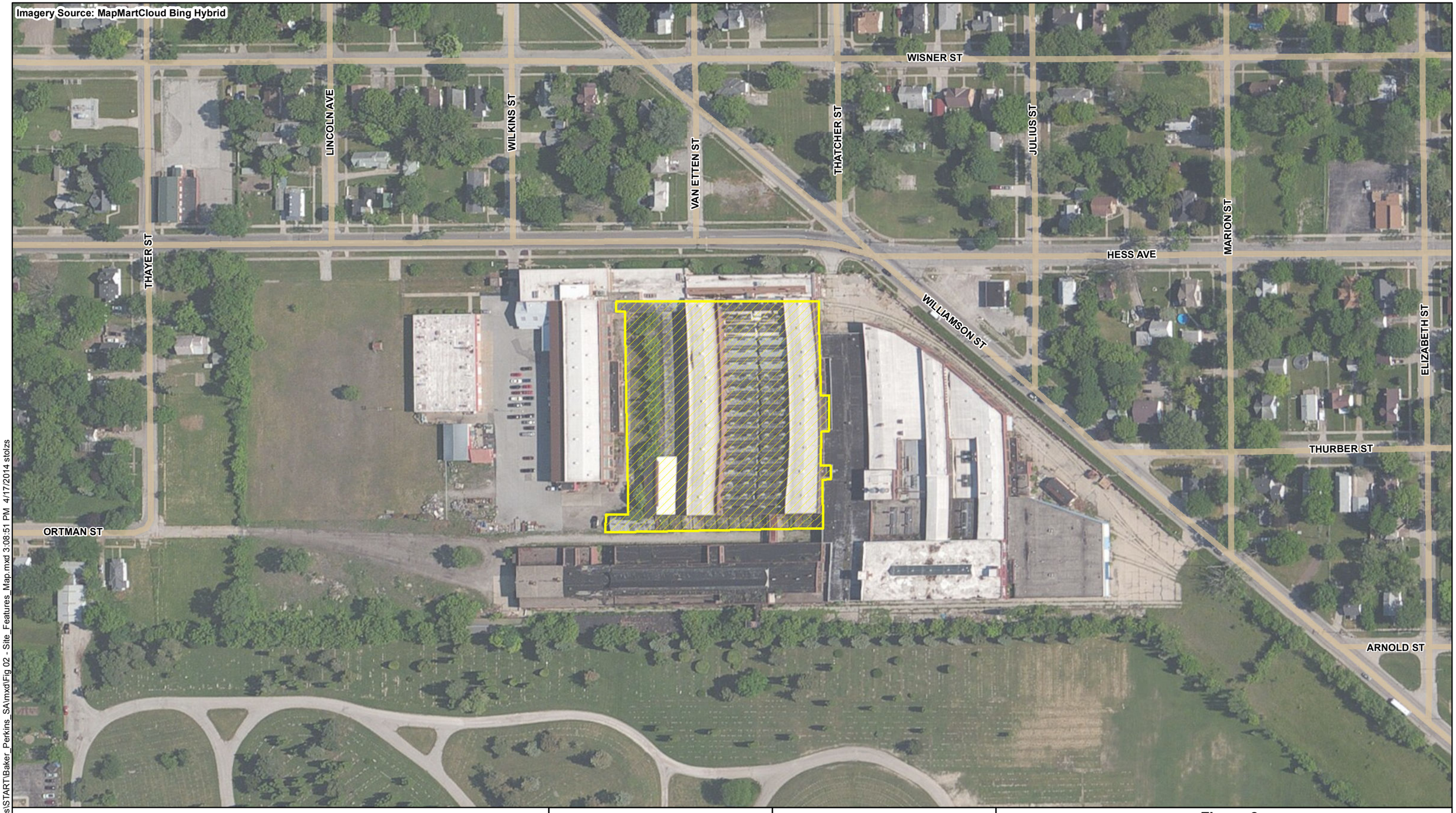
Figure 1
Site Location Map
Baker Perkins SA
1010 Hess Avenue
Saginaw, Saginaw County, Michigan



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Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl

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Figure 2
Site Features Map
Baker Perkins SA
1010 Hess Avenue
Saginaw, Saginaw County, Michigan